

Claims

- [c1] What is claimed is:
- 1.A guiding mechanism for use in an image capturing device, the image capturing device comprising a housing, a scanning module movably installed inside the housing for scanning documents, and a driving module for driving the scanning module, the guiding mechanism comprising:
- a guide shaft for supporting the scanning module; and
- at least a sleeve connected to the scanning module and movably installed on the guide shaft, the sleeve comprising an inner side and at least two protrusions protruding over the inner side that are respectively positioned on two opposite sides of a line of gravity of the sleeve, the sleeve contacting the guide shaft along the protrusions;
- wherein when the driving module drives the scanning module to move along the guide shaft, the scanning module is supported by the guide shaft via the at least two protrusions of the sleeve.
- [c2] 2.The guiding mechanism of claim 1 comprising two sleeves, an inner side of each sleeve comprising two protrusions respectively positioned on two opposite sides of the line of gravity of the sleeve to prevent horizontal wobbling of the scanning module, each of the sleeves movably enclosing an outer surface of the guide shaft and contacting the guide shaft via the two protrusions.
- [c3] 3.The guiding mechanism of claim 1 wherein gravitational force exerted by the scanning module causes the sleeve to be depressed against the guide shaft.
- [c4] 4.The guiding mechanism of claim 1 wherein the sleeve is an elastomer having a gap, the scanning module having a guide ring for accepting the sleeve, and when the sleeve is installed within the guide ring, the sleeve is capable of elastically expanding outward to engage an inner surface of the guide ring.
- [c5] 5.The guiding mechanism of claim 1 wherein the image capturing device further comprises a linear frame mechanism for supporting one side of the scanning module, and the guide shaft is used to support the other side of the scanning module.

[c6] 6.The guiding mechanism of claim 1 wherein the guide shaft is a circular shaft, and the sleeve is a circular sleeve.

[c7] 7.The guiding mechanism of claim 1 wherein a lubricant is disposed over a surface of the guide shaft to reduce friction between the sleeve and the guide shaft, and the sleeve has two beveled surfaces respectively enclosed in two sides of the inner side of the sleeve to prevent the lubricant from flowing away from the surface of the guide shaft due to relative motion between the sleeve and the guide shaft.

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